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ABSTRACT

This paper discusses the use of technology, including computers and media tools, to enhance teacher education. Benefits of technology in the classroom are considered, particularly increasing student and instructor motivation, enhancing the learning process and instruction, and facilitating classroom management and organization. Technological resources such as CD-ROM players, videos, the Internet, electronic reference materials and other tools support and enhance the traditional educational resources of textbooks, movies, video tapes, magazines, and reference materials. The University of Idaho College of Education is developing innovative ways of using educational technology in teacher education, such as use of e-mail for transmission of assignments, use of multi-media software to develop projects and presentations; and developing a presentation using computer graphics. These efforts encourage students to use technology and places technology in the classroom. Two appendices are included: an outline detailing the steps for creating a presentation and a Powerpoint quick reference guide. (JPB)

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USING TECHNOLOGY TO ENHANCE TEACHER PREPARATION

Paper Presented at the NORTHWEST ASSOCIATION OF TEACHER
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USING TECHNOLOGY TO ENHANCE TEACHER PREPARATION

INTRODUCTION

Technology has moved to the forefront of educational innovation and is speeding down the educational highway at a feverish pace. With so much activity focused on schools acquiring computers and having students learn about and with them, the public's expectations for teachers' computer-related knowledge and skills has also increased (Geisert and Futrell, 1995).

Faced with new demands for quality instruction, performance assessment and the integration of technology into the curriculum, colleges and universities are feverishly searching for ways to use available technology for the improvement of teaching and learning.

Acutely aware of the need for trained professionals to staff our public schools, university teacher education programs are struggling to develop effective ways to integrate the study of educational technology into the curriculum. It would be difficult and deplorable to find a university engaged in the preparation of teachers without at least one formal computer-related course in the curriculum.

IMPORTANCE OF TECHNOLOGY IN TEACHER EDUCATION

The importance of integrating technology into teacher education, especially the use of computers, is illustrated by a study conducted by Baird (1990). More than two-thirds of science and math teachers reported that they

were totally or somewhat unprepared to use technology. Training for these teachers took place mainly in the form of in-service workshops whose total duration was about three days and after they completed their formal university teacher education program.

Even if teachers had a college technology course only a few years ago, technology advances very rapidly. It is very possible that these teachers have already experienced on-the-job opportunities they were unprepared to take advantage of and further develop. For this reason teacher education students are being exposed to and expected to use new technology such as high speed computers, video discs, high-speed modems, CD-ROMs, video capture products and other forms of technology as it becomes available (Grabe and Grabe, 1996).

The tools of many professions are changing at an incredible rate. Teachers and those preparing to teach must not be left out of this fascinating change in our society. Schools must provide adequate teacher training, at both the preservice and inservice levels, that enables teachers to become fully aware of and skilled in using the vast resources that today's technology offers (Hirschbuhl and Bishop, 1996).

HOW TECHNOLOGY CAN ENHANCE TEACHER EDUCATION

Educational technology can enhance teacher education in many ways. First, it can enhance the process of teaching. For example, graphic presentations can be designed and presented in such a way that learner interest is increased and retention of cognitive material is stimulated. Technology used in this way serves as a reinforcement tool. Second, it can be

used by teacher education students to learn classroom material in a more meaningful way such as through interactive video technology, distance learning, multimedia program authoring, data organization and manipulation, and of course word processing.

The key to the use of technology for the enhancement of teaching and learning is for future teachers to learn to use available technology in a meaningful way; as a new and innovative resource to maximize learning. At first this can be time consuming. However, as educators become familiar with available technology the opportunities for teaching enhancement will expand. As stated by Chris Dede in a conversation with O'Neil (1995), "... emerging technologies can provide sustained support to teachers as they experiment with new ways of teaching and learning (p. 6)." If we don't this the newest arrival on the educational horizon may join the graveyard of school reform which is littered with technological innovations that have failed to live up to taunted expectations.

Below are additional ways that technology can be used to further enhance teaching and learning:

Student/Instructor Motivation

Educational technology enhances student/instructor motivation. It provides both with a heightened desire to learn. As instructors and students become more comfortable with educational technology they will find it a tool to make their work easier. Educational technology happens to be visually stimulating, even entertaining. Creativity is expanded with a wide array of tools that educational technology supplies. By increasing motivation and interest

educational technology can make teaching more interesting and learning more meaningful.

Learning

Educational technology enhances learning and the learning process. Learning is a processes of acquiring information through experience or study to understand the world around us. Educational technology helps reinforce this process through its use of visual media, sounds, and the use of touch. Educational technology also plays a role in the more recent trend of "distance learning", transmitting instructional programs via microwave or the Internet to places outside of the traditional classroom. Learning can be facilitated through independent learning courses. This provides flexibility for both the student and instructor when there is a conflict of scheduling. Educational technology makes it easier for teachers and students to access information for study. Through the use of educational technology learning can therefore be enhanced.

Instruction

Educational technology enhances instruction. There are times when describing a concept just doesn't work. As an instructional tool presentation graphics provides the teacher with a wide variety of techniques to present information to the learners. By using educational technology a teacher can use charts, graphs, pictures, or even movies to describe a concept. Clip-art libraries can be created to incorporate stimulating graphics and animation to help emphasize important points. Overheads and handouts can be created using this same applicable software. Computer technology can also be used to

create simulations and case studies. Through these and other methods educational technology can also enhance instruction.

Classroom Management

Educational technology enhances classroom management. For example, software for grading is widely available. This lets the teacher know how well students are understanding the concepts presented. Seating charts can allow teachers to quickly take roll and keep track of how often students have been attending class. Creating a database of student information can be very beneficial for instructors. Names, ages, addresses, and phone numbers can be easily accessed. Mailings to students can be created quickly and used extensively.

Other Resources

Educational technology enhances previously used educational resources. There are many forms of educational technology that can assist teachers and students. These include: computers, CD-ROM players, Laser Disk devices, scanners, modems, digital cameras, and many other items that support these major tools. Textbooks can be enhanced through the use of CD's that cover similar information. Abstracts and indexes are now on CD's and the Internet so that research can be done with more depth and speed. Electronic reference materials are available to support traditional resources. Educational technology therefore, supports and enhances the traditional educational resources of textbooks, movies, video tapes, magazines and reference materials.

Organization

Educational technology enhances organization. Educators today are busier than ever with concerns about funding, research, student advising, committee meetings, public service, and of course teaching classes. Word processing can be used to maintain and update course outlines, class notes, and other classroom related material. Computerized calendars can be used to keep track of meetings and appointments. E-mail for academic advising consulting can increase student-faculty contact and make the contact time and place independent.

These are only some of the ways that technology can be used for the enhancement of teaching and learning. As new and innovative devices emerge, educators will have a plethora from which to choose. It is indeed an exciting time for education as it is joined with technology.

EDUCATIONAL TECHNOLOGY IN TEACHER EDUCATION AT THE UNIVERSITY OF IDAHO

The University of Idaho's College of Education is developing innovative ways for faculty and students to use educational technology. For example, in some courses students are turning in their assignments via e-mail per directions found on faculty home pages. As students complete assignments on computers they are able to easily transfer them to professors. This means that a student can complete an assignment at any time and send it to the professor. The professor then has the option of printing and grading the assignment in the traditional fashion or leaving it on the computer and making "audio" suggestions attached to the electronic paper. The professor can then

return the paper on disk so that the student can listen to the critique and suggestions.

To facilitate the submission of assignments, students now have access to several methods. Traditional 3.5 inch floppy disks can be used to store small projects or students may elect to use Zip drives with a 100mb capacity for larger assignments, such as multimedia projects. Professors can then have a detailed look at what each student, or groups of students, has produced and supply appropriate feedback.

At the University of Idaho several professors are using educational technology in creative ways to enhance teaching. For example:

Dr. Jack Nelson is using educational technology in his "Introduction to Research Methods" class. Dr. Nelson uses PowerPoint software to display lecture notes as well as charts and graphs dealing with research information. This provides students with key information that he wants them to know and gives students a visual representation of the topics he is discussing.

Dr. John Fodor-Davis uses educational technology in his "Multimedia Applications" class. Students use multimedia software such as PowerPoint, HyperStudio, and Astound as authoring tools to develop multimedia projects and presentations. This allows students to express their ideas in creative and interesting ways.

Dr. Melvin Pedras uses educational technology in his "Introduction to

Educational Technology" class to familiarize students with technology that can be used to enhance classroom. Students explore both hardware and software and develop ways to present instructional content in meaningful ways. After completing this course, students will be able to enter into the modern classroom ready to implement these tools.

Educational technology will continue to grow. As it grows it will provide teachers and students with better ways to express themselves and the knowledge they are trying to convey. Teachers and students at the University of Idaho's College of Education will be at the forefront of using these innovations.

DEVELOPING A GRAPHICS PRESENTATION

One way that teacher education students are being taught to use technology is through the creation of presentation graphics. Through the use of assignments such as the one described below, future teachers are able to conceptualize, design and deliver presentations with high learner retention.

The example given below is for illustrative purposes only and is one of many that teachers can use to enhance instruction.

PRESENTATION GRAPHICS ASSIGNMENT

The purpose of this assignment is to provide you an opportunity to develop a computer graphics lecture presentation outline. You will utilize the PowerPoint software program and create a series of 2-3 slides which can be used to either: introduce yourself and describe your philosophy of teaching and learning or introduce a short lesson. Clip art should be used on the majority of the slides.

Utilize as many feature of the software package as possible. Consider using the template and outline feature to augment your work.

Save your work on diskette and/or the hard disk.

GIVE THE TITLE OR SUBJECT OF THE ABOVE LECTURE HERE

Use the following steps as a guide for creating your presentation. Refer to DETAILED STEPS FOR CREATING A PRESENTATION if more detailed information is needed.

QUICK STEPS FOR CREATING A PRESENTATION

Start PowerPoint: Locate the PowerPoint icon and launch the application. The first screen you will see is the "New Presentation" window.

Decide which option you want to use. For a quick presentation use the Pick A Look Wizard. Follow these Pick a Look Wizard steps:

Step 1: This gives you some information about Pick a Look Wizard.

Step 2: Decide which type of final product you want from the choices given.

Step 3: Decide on which type of template design you want to use for your background.

Step 4 - 8: Decide which options to have when you print your document. For each item checked you will see a new window and answer questions about that choice.

Step 9: Click on the "Finish" button!

You are now ready to add text and graphics to your presentation.

See attachment to this paper for a Presentation Graphics Example.

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DETAILED STEPS FOR CREATING A PRESENTATION

PowerPoint: Step by Step

Create An Outline

Before you start creating your PowerPoint presentation spend a few minutes developing an outline of the information that will go on each slide. Have available any text or graphics you want in your presentation.

Launch PowerPoint

Locate the PowerPoint application icon. Launch PowerPoint by double-clicking on the icon.

Create a New Presentation

The "Create a New Presentation Using" window should appear. From this window you can create a presentation using these choices:

- AutoContent Wizard
- Pick a Look Wizard
- Templates
- Blank Presentation
- Open an Existing Presentation

Choose the selection you want by clicking on the appropriate button. Click the OK button.

Pick a Look Wizard (Step 1)

This window gives you some information about using "Pick a Look Wizard". Read it and then click the "Next" button.

Type of Output (Step 2)

You have several choices to make as far as how you want the final output of your presentation to look.

Among your choices are:

- Black and White
- On-Screen Presentation
- 35 mm Slide

Choose the selection you want by clicking on the appropriate button. Click the "Next" button

Template Design (Step 3)

You have several choices to make as far as your slide background is concerned.

Among your choices are:

- Blue Diagonal

- World
- Double Lines
- Multiple Bars
- More

Choose the selection you want by clicking on the appropriate button. Click the "Next" button

Print Choices (Step 4-8)

You also have several choices about how you want your printed material to look. Among choices are:

- Full Page Slide
- Speakers Notes
- Audience Handout Page
- Outline Pages

Choose the selection you want by clicking on the appropriate buttons. For each choice you make there will be another slide asking some questions about how the printout will look. Click the "Next" button.

Finish (Step 9)

This window tells you that you have successfully completed the "Pick a Look Wizard". Click on the "Finish" button.

Presentation Title Page

The first slide that should appear is one that asks you to add a title and sub-title.

Adding Text

To enter text click within the text rectangle. A cursor will appear allowing you to type. When you have finished with one text area click on the other to enter more information.

Adding Graphics

There are two types of graphics to add to a PowerPoint presentation: pictures and clipart.

To add a picture select the "Insert/Picture" menu item. A dialog box will appear. You need to find the picture you want to add to your slide. Select the picture you want to add by single clicking on it so it is highlighted. Click the "Insert" button. The picture should appear on your slide.

To add clipart select the "Insert/ClipArt" menu item. Choose from the clipart objects on the screen by single clicking on one. Click on the "OK" button.

To move pictures or graphics on the screen click on the "Selection Tool". Single click-hold-drag on the picture to move it.

New Slide

To add a new slide select the "Insert/New Slide" menu item. This is the slide layout window. You will be given several choices. Decide how you want your

slide to look. Select the layout for your slide by clicking on it once. Click on the "OK" button.

Save Menu

To save your presentation use the "File/Save" menu item. You will be presented with a dialog box. Choose the drive and folder/directory to which you want to save your presentation. Once you have identified where you want your presentation saved to click the "OK" button.

Slide Show

To see your slide show choose the "View/Slide Show" menu item. Use your mouse, space bar, or left/right arrow keys to move within your presentation. Any time you want to exit your slide show press the "Esc" button.

POWERPOINT QUICK REFERENCE

Creating New Slides:	1. Choose the "Insert/New Slide" menu item. 2. Click the "New Slide button" on the status bar.
Deleting Slides:	Choose the "Edit/Delete Slide" menu item while in the Slide view.
Saving Presentations:	1. Choose the "File/Save" menu item. 2. Type the name of the presentation. 3. Choose a directory or folder you want to save it in. 4. Click on the OK button.
Adding ClipArt	1. Click the "Insert Clip Art" button on the toolbar, or 2. Choose the "Insert/Clip Art" menu item. 3. Select the image you want by double-clicking it, or 4. Select it and click on the OK button.
Adding Text	1. Make sure the text tool is selected. 2. Click in the text placeholder. 3. Start typing your text.
Changing Text Attributes	1. Select the text you want to change. 2. Select a tool on the toolbar, or 3. Choose the "Format/Font" menu item. 4. From the Font dialog box make your changes. 5. Click on the OK button.
Using the Selection Tool	1. Make sure the selection tool is selected. 2. Touch a part of the object with the pointer, then click. 3. To deselect a selected object click the pointer somewhere on the screen that is not on the selected object.
Working in Views	1. You can switch among five views (Slide view, Outline view, Slide Sorter view, Notes Pages view, Slide Show view) of your presentation. 2. To switch between views, click the button at the bottom left of the PowerPoint window that represents the view you want. 3. You can also use the View menu to select a different view.

Spell Checking	Choose the "Tools/Spelling" menu item, or click the Spelling button on the toolbar.
Deleting Text/Graphics	1. To delete a graphic choose the selection tool, click on the graphic you want to eliminate, and press the delete key. 2. To delete text choose the text tool, highlight the text you want to eliminate, and press the delete key.
Running A Presentation	1. Open the presentation. 2. From the View menu, choose Slide Show. 3. Under Slides, choose which slides you want to watch. 4. Under Advance, choose how you want to advance the slides. 5. Choose Show.
Printing A Presentation	1. Choose the "File/Print" menu item. 2. Select what you want to print. 3. Type the number of copies you want to print in the copies box. 4. Enter the range of slides or notes pages to be printed. 5. Select any additional print options you want. 6. Click on the OK button.
Slide Transitions	1. Enter the Slide Sorter view. 2. Choose the "Tools/Transition" menu item. 3. Select the transition you want. 4. Decide how fast the transitions will take place. 5. Click on the OK button.
Slide Builds	1. Choose the "Tools/Build" menu item. 2. Decide how you want each bullet point to be displayed.

Appendix C

PRESENTATION GRAPHICS EXAMPLE

(See Attachment)

MELVIN J. PEDRAS, Ed.D.

Professor of Education
University of Idaho

SLIDE 1

PROFESSIONAL EXPERIENCE

- Junior High/High School Teacher
- Community College Professor/
Administrator
- University Professor



SLIDE 2

EDUCATIONAL BELIEFS

- Everyone can learn almost anything
- Learning must be available to all people
- Teaching is the highest form of
understanding

SLIDE 3